

Walking Directions

You need

- 50-foot distance marked with one-foot increments
- clock/watch for measuring seconds
- time cards: 0 seconds, 2 seconds, 4 seconds...30 seconds
- graph paper
- 3 student volunteers: a walker, a time-keeper, a spotter

Ask a volunteer to walk along the 50-foot distance for 20 to 30 seconds using a given set of walking directions. Ask another volunteer to be the time-keeper and call out "Mark!" every two seconds. Ask a third volunteer to be a spotter and mark the walker's distance from zero feet throughout the walk by placing time cards at the location of the walker at two-second intervals.

Ask students to create a picture, t-chart, and graph to represent the walker's distance from zero feet during the thirty seconds of walking. Next, ask students to compare the representations, discussing how each representation reflects the motion of the walker and the written walking directions.

Sample Walking Directions

- Start at zero feet of the marked distance. Walk forward slowly, at a constant rate, until you reach the end of the marked distance.
- Start at zero feet of the marked distance. Walk forward quickly, at a constant rate, until you reach the end of the marked distance.
- Start at 50 feet of the marked distance. Walk slowly, at a constant rate, until you reach zero feet of the marked distance.
- Start at 50 feet of the marked distance. Walk slowly, at a constant rate, until you reach the middle of the marked distance. Stop and stand there for the remaining time (until the time-keeper says, "Stop.")
- Start at zero feet of the marked distance. Walk forward quickly, at a constant rate, until you reach the middle of the marked distance. Stop and stand there for 4 seconds, then slowly return to zero feet of the marked distance.

Extension: Ask students to work in small groups to create their own walking directions. Ask each group to act-out the directions and then create a picture, table, and graph to represent the collected data. Randomly post the representations in the room, and ask students to match-up the different representations for each group's walking directions.

Adapted from TEXTEAMS— Algebraic Reasoning for Middle Schools and TERC— Investigations in Number, Data, and Space: Patterns of Change at Grades 5/6

Assessment: Is each graph possible? If so, write walking directions the graph could represent. If not, explain why.

